

## ORNITHOLOGICAL LITERATURE

EVOLUTION AND THE DIVERSITY OF LIFE: SELECTED ESSAYS. By Ernst Mayr. Belknap Press of Harvard University Press, Cambridge, Mass., 1976: ix + 721 pp. \$20.00.—In this book Ernst Mayr presents 47 essays on various topics in evolutionary biology originally published in many books and journals between 1940 and 1974, though most are from the past 2 decades. Some of the essays have been shortened, have had the references updated, or have been adapted by the addition of new comments clearly distinguished from the original version. Two have been translated into English. The essays are divided into 9 sections, their titles and the number of essays in each being: (I) Evolution (9 essays); (II) Speciation (7); (III) History of Biology (6); (IV) Philosophy of Biology (4); (V) Theory of Systematics (4); (VI) The Species (5); (VII) Man (1); (VIII) Biogeography (9); and (IX) Behavior (2). For each section Mayr has written a brief introduction placing the topic in historical context and assessing his own contribution to it. Many of the essays deal directly with birds and will be of special interest to ornithologists; these include "Bird speciation in the tropics," "History of the North American bird fauna," "Inferences concerning the Tertiary North American bird faunas," "The origin and history of the Polynesian bird fauna," "Fragments of a Papuan Ornithogeography," "The ornithogeography of the Hawaiian Islands," and "The nature of the colonization of Birds." Most of the essays do not deal directly or principally with birds, but with general aspects of evolution and systematics that are applicable to ornithology as well as other branches of evolutionary biology. This is a valuable collection of essays, many of which are otherwise available only in specialized libraries. For anyone interested in the evolutionary aspects of avian biology, this book is indispensable.—ROBERT J. RAIKOW.

ECOLOGY AND EVOLUTION OF AN ANDEAN HUMMINGBIRD (*Oreotrochilus estella*), by F. Lynn Carpenter. University of California Press, Berkeley, California, 1976: 106 pp., 8 black-and-white plates, 14 text figs., 11 tables. \$2.50.—Probably more than any other avian group, hummingbirds are presently serving as vehicles for testing ecological-evolutionary theory. The attention is well deserved. The ease with which they can be observed and captured, their territorial tendencies and dependency of spatially and temporally restricted nectar sources, and the great degree of species' sympatry, are all attributes that make them a convenient group to study. Surprisingly, however, there are only 2 monographs on individual species; one by F. Gary Stiles on the behavioral ecology of *Calypte anna*, and the recent one considered here. Carpenter continues the trend set by Stiles—dependence on long-term systematic study, thorough documentation, and insistence that the way to understand the evolution of a species is through its extant ecology.

Carpenter follows the activity of *Oreotrochilus estella* through 2 wet seasons and 1 dry season in southern Peru and northern Chile. *O. estella* is one of only a handful of resident hummingbird species living above 4000 m, though species literally swarm on the slopes and in the lowlands below. Carpenter set out to identify the morphological, behavioral, and ecological adaptations that are integrated into the life history strategy of *O. estella* and which allow it to exploit this climatically rigorous and vegetatively sparse habitat. Hummingbirds seem to be more specialized and less variant in morphology, physiology, and behavior than most other avian groups, thus Carpenter has selected this particular species as the one most likely to be "aberrant" and show striking differences in these categories from "typical" tropical or temperate species.